

Granulosa cell tumor presenting with ovarian torsion and de novo borderline mucinous ovarian tumor in the contralateral ovary

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Summary

The authors report a case of 25-year-old women with a rare acute presentation of granulosa cell tumor (GCT) as an ovarian torsion. Right salpingo-oophorectomy was performed. The pathological diagnosis was GCT. One month after the surgery there was a three-cm ovarian cyst in the contralateral ovary and the tumor size increased to six cm in diameter in the following month. Serum inhibin-B levels progressively increased. Cystectomy was performed to contralateral ovary as frozen-section examination indicated mucinous tumor. Final histopathological examination revealed borderline mucinous tumor. Regarding her request, the patient was reoperated again and unilateral oophorectomy and hysterectomy were performed. Clinicians must be aware of the possibility of an underlying malignancy associated with adnexal torsion even in young patients. Frozen section will be helpful in order to avoid incomplete surgeries. Cyst rapidly growing in the ovary in young women should raise the suspicion of a de novo malignancy.

Key words: Granulosa cell tumor; Ovarian torsion; Mucinous tumor; Frozen section.

Introduction

Granulosa cell tumors (GCT) are rare ovarian malignancies that arise from sex-cord stromal cells and account for approximately 1.5 to three percent of all ovarian malignancies [1]. Borderline ovarian tumors (BOTs) appear in young women accounting for 10–15% of epithelial ovarian tumors. They have a low invasive potential and most are cured with surgery [2, 3]. The authors came across an interesting case in which the underlying lesion behind torsion in a young woman was GCT, which is scarcely seen, and a de novo borderline mucinous tumor emerged in the contralateral ovary only two months after the index tumor.

Case Report

A 35-year-old women gravida 1, para 1 was admitted complaining of acute sharp abdominal pain increasing in intensity and nausea. Physical examination revealed a marked right lower quadrant abdominal tenderness with guarding and a large, palpable mass in the right lower abdomen above the umbilicus. Ultrasonography and colored Doppler showed a predominantly cystic mass approximately 15x12 cm with few septations in the right adnexial region with no arterial flow and free fluid in the Douglas space. The hemoglobin, hematocrit, leukocyte count, and tumor markers CA-125, CA 19-9, AFP, and CEA were all within the normal limits.

She was suspected of having ovarian torsion on the right ovary and underwent laparotomy. During operation, moderate amount of ascites was observed and the enlarged right ovary was found to be twisted twice around its pedicle. The opposite ovary and uterus

were normal. Ascitic fluid was recovered from the abdomen for cytology and right salpingo-oophorectomy was performed.

The final pathological diagnosis was adult-type GCT originating from the right ovary, and cytology of ascites fluid was suspicious of malignancy. Since the diagnosis of GCT was not suspected, serum inhibin level was not assessed before surgery. The ultrasonography one month after the surgery showed a three-cm ovarian cyst in the contralateral ovary and the tumor size increased to six cm in diameter in the following month. Moreover, serum inhibin-B levels progressively increased from 29 to 99 ng/l.

Because of the histology of the preceding tumor, rapidly increasing inhibin levels, and rapidly growing cyst on the contralateral ovary, the authors decided to perform a restaging surgery. The patient underwent laparotomy, a six-cm ovarian cyst was seen in the left ovary, cystectomy was performed, and the intraoperative frozen-section examination indicated mucinous neoplasia. Comprehensive surgical staging and appendectomy was performed. Final histopathological examination revealed GCT and BOT Stage 1a for both tumors. According to final pathologic diagnosis, the patient was fully informed about conservative surgery. The patient refused strongly to undergo conservative procedure. Therefore, patient was reoperated again and unilateral oophorectomy and hysterectomy were performed.

In young patients who desire to preserve fertility and have disease that is confined to one ovary according to staging surgery, a conservative unilateral oophorectomy would be preferred in GCT [4]. In the present case, an ovarian cyst in contralateral ovary doubling in diameter within one month occurred. In general, tumors demonstrating rapid growth should prompt suspicion of malignancy [5].

In the present case, the accurate diagnosis was not established on intraoperative frozen section due to mucinous histology. Inaccurate diagnosis was encountered more frequently with mucinous tumors than other tumor histologies [6].

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It is acceptable to perform cystectomy or unilateral salpingo-oophorectomy to preserve fertility in Stage I BOT. However, simple ovarian cystectomy for BOT is associated with a higher risk of recurrence than unilateral salpingo-oophorectomy or Bilateral salpingo-oophorectomy [7]. Therefore patients should be very carefully informed about the risks of recurrence [8].

Discussion

Although ovarian masses large enough for torsion are accepted as malignant in postmenopausal women, malignancy risk should not be omitted in young women presenting with torsion. To avoid the second laparotomy, frozen section examination may be required even if there is no suspicion for a malignant lesion.

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